

① Using the variables $M, N,$ and P ,
write an equation for the following directions.

② Then substitute in the following values:

$$\underline{M = 2} \quad N = 4 \quad P = -1$$

A: Five times P minus N .

$$5P - N$$

$$5(-1) - 4 = -5 - 4 = \boxed{-9}$$

B: Negative three times M plus P .

$$\begin{aligned} -3 \cdot M + P &= -3 \cdot 2 + -1 \\ &= -6 + -1 = \boxed{-7} \end{aligned}$$

Matrices (scalars, +, subtraction)

A way to collect & organize data.

	boys	girls
Soccer	3	0
b-ball	4	7
lacrosse	2	4

↑
rows

← columns



Referred to as rows x columns.
(3 x 2)

To add or subtract matrices the dimensions must match.

Multiplying by a scalar

$$\textcircled{1} \quad 5 \begin{bmatrix} 0 & 2 \\ 1 & -6 \end{bmatrix} = \begin{bmatrix} 5 \cdot 0 & 5 \cdot 2 \\ 5 \cdot 1 & 5 \cdot -6 \end{bmatrix}$$

2×2

$$= \begin{bmatrix} 0 & 10 \\ 5 & -30 \end{bmatrix}$$

2×2

Solve for x & y

$$\textcircled{2} \quad 2 \begin{bmatrix} 0 & x \\ 4 & y \end{bmatrix} = \begin{bmatrix} 0 & -16 \\ 8 & 12 \end{bmatrix}$$

$$2x = -16$$
$$x = -8$$

$$2y = 12$$
$$y = 6$$

Addition / Subtraction

$$\textcircled{1} \begin{bmatrix} 4 & 3 \\ -2 & 1 \end{bmatrix} + \begin{bmatrix} 5 & -6 \\ 1 & 0 \end{bmatrix} = \begin{bmatrix} 9 & -3 \\ -1 & 1 \end{bmatrix}$$

$$\textcircled{2} \begin{bmatrix} 6 & -8 \\ -4 & 6 \\ 2 & 7 \end{bmatrix} - \begin{bmatrix} -5 & 9 \\ 3 & -7 \\ 0 & 2 \end{bmatrix} = \begin{bmatrix} 11 & \\ & \end{bmatrix}$$

$$\begin{bmatrix} 6 & -8 \\ -4 & 6 \\ 2 & 7 \end{bmatrix} + \begin{bmatrix} 5 & -9 \\ -3 & 7 \\ 0 & -2 \end{bmatrix} = \begin{bmatrix} 11 & -17 \\ -7 & 13 \\ 2 & 5 \end{bmatrix}$$

$$[A] = \begin{bmatrix} 6 & -8 \\ -4 & 6 \\ 2 & 7 \end{bmatrix} \quad [B] = \begin{bmatrix} -5 & 9 \\ 3 & -7 \\ 0 & 2 \end{bmatrix}$$

$$[A] - [B]$$

p191 #4-6
#10,11
#16,18